SDG&E June 15th, 2022

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

In Response to Data Request, R15-01-008 2022 June Report
Appendix 5; Rev. 03/30/2022

Notes:

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

As revised in 2022, add F1, F2 and F3 for Farm Taps

Distribution M&R Station Leaks and Emissions (Informational Purposes Only)

Number of Stations	Station Classification	Emission Factor (Mscf/yr)	Annual Emissions (Mscf)	Explanatory Notes / Comments
2	A1	40.6	81	2021 EOY Above Grade < 100# Actual Inlet Press
13	A2	896.5	11,655	2021 Above Grade 100 - 300# Actual Inlet Press
34	A3	1684.5	57,273	2021 EOY Above Grade > 300# Actual Inlet Press
9	B1	0.964	9	2021 EOY Below Grade < 100# Actual Inlet Press
123	B2	1.84	226	2021 Below Grade 100 - 300# Actual Inlet Press
277	B3	12.176	3,373	2021 EOY Below Grade > 300# Actual Inlet Press
			72,616	

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Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.
After completing the tab on "Leak Based - Station Emissions" and "Station - Unknown Leaks" fill in the table for "Leak Based - Emissions Summary."

Distribution M&R Station Leaks:

ID	Geographic Location	M&R Station or Farm Tap Classification	Component Type	Incoming Pressure (psi)	Leak Grade	Upgraded Leak Grade or Downgraded Leak Grade	Leak Discovery Method	Discovery Date (MM/DD/YY)	Re-Grade Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Scheduled Repair Date (MM/DD/YY)	Reason for Not Scheduling a Repair	Number of Days Leaking	Number of Days to Repair	Emission Factor (Mscf/Day)	Annual Emissions (Mscf)	Explanatory Notes / Comments
Not Applicable																	

Sum Total Emissions from leaks carried over from before 2021	-	Provided as an example.
Sum Total Emissions from leaks discovered in 2021	-	Provided as an example.
Sum Total Emissions from O&M Leaks discovered in 2021	-	Provided as an example.
Grand Total of all 2021 emissions from leaks	-	Provided as an example.

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Notes:
If highlighted cells are filled in, the other cells will auto-populate

Summary of Data by Distribution M&R Station Results for Annual System Leak Rate and Resulting Number of Unknown Leaks calculated for M&R Station

M&R Station Classification; Leak Grade or Bubble Size Category if available.	Total System M&R Station per survey Cycle	M&R Station on Annual Survey [MX,A]	M&R Station on Multi-Year Survey Cycles [MXTot]	Survey Interval (yrs) [*I*]	M&R Station Surveyed Annually from Multi-Year Survey Cycles [MX,I]	Total # of Leaks Detected from Survey [$N_{X,L}$]	Annual Leak Rate [Leaks / Meter] $R_X = \frac{N_{X,L}}{M_{X,A} + (I \times M_{X,I})}$	# of Unknown Leaks $N_{X,unk} = \overline{R_X} \times (M_X^{Tot} - M_{X,I}) \times \frac{I}{2}$	Total # of Leaks Detected from O&M* [$N_{X,O}$]
Not Applicable				1			-	-	
				3			-	-	
				5			-	-	
				1			-	-	
				3			-	-	
				5			-	-	
				1			-	-	
				3			-	-	
				5			-	-	
				1			-	-	
				3			-	-	
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				1			-	-	
				3			-	-	
				5			-	-	
				1			-	-	
				3			-	-	
				5			-	-	
				1			-	-	
				3			-	-	
				5			-	-	
Total	0	0	0	N/A	0	0		0	0

Estimated Emissions by Leak Code

Leakage Category Facility/Material	Emission Factor (Mscf/day/leak)	Emissions from Leaks Detected from Survey (Mscf)	Emissions from O&M* Leaks Detected (Mscf)	Estimated Emissions from Unknown Leaks (Mscf)	Total Estimated Emissions from Leaks (Mscf)
Total	N/A	0	0	0	

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Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas M&R Stations and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

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This summary purposefully should exclude damages, blowdowns, component emissions and component leaks.

Grade if Applicable	Count of Leaks Carried over from Prior Year	Count of Leaks Discovered in the Year of Interest	Count of Leaks Repaired in the Year of Interest	Average Days to Repair Leaks	Count of Estimated Unsurveyed Leaks in the Year of Interest	Count of Remaining Leaks at final day of the Year of Interest (12/31/xx)	Emissions from Leaks Carried over from Prior Year.	Emissions from Leaks Discovered in the Year of Interest.	Emissions from Estimated Unsurveyed Leaks in the Year of Interest	Total Emissions in the Year of Interest [Mscf of Natural Gas]
Grade A	Not Applicable					#VALUE!			NA	-
Grade B						-			NA	-
Grade C						-			NA	-
Grade D						-			NA	-
Above Ground Hazardous						-			NA	-
Above Ground Non-Hazardous						-			NA	-
Above Ground Non-Hazardous Minor						-			NA	-
Graded Leak Total	-	-	-	-	-	#VALUE!	-	-	-	-

x

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In Response to Data Request, R15-01-008 - 2022 June Report

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Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

Distribution M&R Station Damage (3rd party dig-ins, natural disasters, etc.):

ID	Geographic Location	Damage Type	Pipe Material	Pipe Size (nominal)	Pipe Age (months)	Pressure (psi)	Leak Grade	Above Ground or Below Ground	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/Day)	Annual Emissions (Mscf)	Explanatory Notes / Comments
												Sum total	0	

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In Response to Data Request, R15-01-008 2022 June Report

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Notes:

Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.

At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

Distribution M&R Station Blowdowns:

ID	Geographic Location	Number of Blowdown Events	Annual Emissions (Mscf)	Explanatory Notes / Comments
N/A	SDG&E Territory	2,082	8	External District Reg. Inspection at Distribution M&R Stations - Estimated avg. gas vented = 4 scf/insp
N/A	SDG&E Territory	9	0.27	Filter Change out or Filter Inspection w/parts replacement - Estimated avg. gas vented = 30 scf/ea
N/A	SDG&E Territory	459	6.03	M&R Station Inspection Blowdown
N/A	SDG&E Territory	110	1	Reg. Change out & Internal Reg. Inspesction at Distribution M&R Stations - Estimated avg. gas vented = 12 scf/ea
			16	

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Notes:
The data collected on this sheet is for informational purposes and may not be included in the emissions inventory for 2021. The worksheet is designed to track actual emissions for future reference and to determine if an actual leak based emission accounting is feasible for M&R stations.
If you record data using this table and you only leak survey part of your system, you must extrapolate emissions from leaks up to account for emissions from your entire system for the year.
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange

The emissions captured on this tab represent the emissions associated with the operational design and function of the component. Any intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.

Distribution M&R Station Component Vented Emissions:

ID	Geographic Location	Station Classification	Device Type	Bleed Rate	Manufacturer	Number of Days Emitting	Engineering or Manufacturer's based Estimate of Emissions	Annual Emissions (Mscf)	Explanatory Notes / Comments

SDG&E June 15th, 2022

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.
In Response to Data Request, R15-01-008 2022 June Report
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Notes:

The data collected on this sheet is for informational purposes and will not be included in the emissions inventory for 2021. The worksheet is designed to track actual leaks for future reference and to determine if an actual leak based emission accounting is feasible for M&R stations.

If you record data using this table and you only leak survey part of your system, you must extrapolate emissions from leaks up to account for emissions from your entire system for the year.
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange
The emissions captured on this tab represent the emissions associated unintentional leaks that if repaired would not leaking. If the component is releasing gas or "bleeding" as a result of its design or function then it is not to be captured in this tab.

Distribution M&R Station Component Fugitive Leaks:

ID	Geographic Location	Station Classification	Device Type	Bleed Rate	Manufacturer	Pressure (psi)	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/day)	Annual Emissions (Mscf)	Explanatory Notes / Comments
100019223744	92003	A3	C	N/A		Greater than 60	01/19/2021	01/19/2021	18	0.0434	0.7812	M&R Leak
100019241481	92123	A3	C	N/A		Greater than 60	01/11/2021	01/11/2021	10	0.0434	0.434	M&R Leak
100019242833	92027	A3	C	N/A		Greater than 60	01/11/2021	01/11/2021	10	0.0434	0.434	M&R Leak
100019288774	92118	A1	C	N/A		Less than or equal	01/21/2021	01/21/2021	20	0.0434	0.868	M&R Leak
100019302780	92081	A3	R	N/A	Mooney	Greater than 60	03/25/2021	03/25/2021	83	0.0198	1.6434	M&R Leak
100019346840	92024	A3	BV	N/A	Cooper/Cam	Greater than 60	03/16/2021	03/16/2021	74	0.0143	1.0582	M&R Leak
100019347426	92009	A3	C	N/A		Greater than 60	03/16/2021	03/16/2021	74	0.0434	3.2116	M&R Leak
100019370205	92129	A3	C	N/A		Greater than 60	02/09/2021	02/09/2021	39	0.0434	1.6926	M&R Leak
100019374654		A2	C	N/A		Greater than 60	02/08/2021	02/08/2021	38	0.0434	1.6492	M&R Leak
100019506163	92120	A2	C	N/A			03/07/2021	03/07/2021	65	0.0434	2.821	M&R Leak
100019507030	92120	A2	R	N/A	Mooney	Greater than 60	03/08/2021	03/08/2021	66	0.0198	1.3068	M&R Leak
100019507591	92123	A3	C	N/A		Greater than 60	03/09/2021	03/09/2021	67	0.0434	2.9078	M&R Leak
100019563699	92081	A2	C	N/A		Greater than 60	03/23/2021	03/23/2021	81	0.0434	3.5154	M&R Leak
100019567380	92081	A2	R	N/A	Fisher	Greater than 60	03/23/2021	03/23/2021	81	0.0198	1.6038	M&R Leak
100019620401	92121	A3	C	N/A		Greater than 60	03/30/2021	03/30/2021	88	0.0434	3.8192	M&R Leak
100019654565	92019	A2	C	N/A		Greater than 60	04/05/2021	04/05/2021	94	0.0434	4.0796	M&R Leak
100019679694	91910	A3	C	N/A		Greater than 60	04/13/2021	04/13/2021	102	0.0434	4.4268	M&R Leak
100019681578 92121		A3	C	N/A		Greater than 60	04/13/2021	04/13/2021	102	0.0434	4.4268	M&R Leak
100019774350	92071	A2	C	N/A		Greater than 60	06/02/2021	06/02/2021	152	0.0434	6.5968	M&R Leak
100019780779	92127	A3	C	N/A		Greater than 60	05/03/2021	05/03/2021	122	0.0434	5.2948	M&R Leak
100019968692 92021		A2	C	N/A		Greater than 60	07/12/2021	07/12/2021	192	0.0434	8.3328	M&R Leak
100020054973	92124	A3	C	N/A		Greater than 60	06/21/2021	06/21/2021	171	0.0434	7.4214	M&R Leak
100020064905		A3	BV	N/A	Rockwell	Greater than 60	06/21/2021	06/21/2021	171	0.0143	2.4453	M&R Leak
100020064906		A3	BV	N/A	Rockwell	Greater than 60	06/21/2021	06/21/2021	171	0.0143	2.4453	M&R Leak
100020305460 92019		A3	C	N/A		Greater than 60	09/15/2021	09/15/2021	257	0.0434	11.1538	M&R Leak
100020400147 92057		A3	C	N/A		Greater than 60	08/23/2021	08/23/2021	234	0.0434	10.1556	M&R Leak
100020424789 92029		A3	R	N/A	Fisher	Greater than 60	10/13/2021	10/13/2021	285	0.0198	5.643	M&R Leak
100020588570 91977		A2	C	N/A		Greater than 60	11/30/2021	11/30/2021	333	0.0434	14.4522	M&R Leak
100020742301 91941		A3	C	N/A		Greater than 60	11/11/2021	11/11/2021	314	0.0434	13.6276	M&R Leak
100020922451 92130		A3	C	N/A		Greater than 60	12/01/2021	12/01/2021	334	0.0434	14.4956	M&R Leak
100020991746 92123		A3	C	N/A		Greater than 60	12/14/2021	12/14/2021	347	0.0434	15.0598	M&R Leak
100020991748 92130		A3	C	N/A		Greater than 60	12/14/2021	12/14/2021	347	0.0434	15.0598	M&R Leak
100021035868 92129		A3	C	N/A		Greater than 60	12/20/2021	12/20/2021	353	0.0434	15.3202	M&R Leak
100021040745 92130		A3	C	N/A		Greater than 60	12/27/2021	12/27/2021	360	0.0434	15.624	M&R Leak
100021078729 92130		A3	C	N/A		Greater than 60	12/27/2021	12/27/2021	360	0.0434	15.624	M&R Leak
										Sum Total	219	

Header column "Comment" boxes displayed below for reference.	
Column Heading	**Description and Definition of Required Contents (If not self-explanatory)**
Station Leaks & Emissions	
Number of Stations	
Station Classification	A1 = above grade, pressure <100 psi A2 = above grade, pressure =100-300 psi A3 = above grade, pressure >300 psi B1 = below grade, pressure <100 psi B2 = below grade, pressure =100-300 psi B3 = below grade, pressure >300 psi
Emission Factor (Mscf/yr)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	

Note, Farm Taps added to column as described in note.

Tab: All Damages	
ID	
Geographic Location	GIS, zip code, or equivalent
Damage Type	E = excavation damage N = natural force damage O = other outside force damage
Pipe Material	PB = cathodically protected steel, bare PC = cathodically protected steel, coated UB = unprotected steel, bare UC = unptotected steel, coated
Pipe Size (nominal)	
Pipe Age (months)	
Pressure (psi)	MOP = maximum operating pressure over the past year
Leak Grade	2 = grade 2 2+ = grade 2+ 3 = grade 3 N = non-graded or ungraded
Above Ground or Below Ground	AH = above ground, hazardous AN = above ground, non-hazardous B = below ground
Discovery Date (MM/DD/YY)	
Repair Date (MM/DD/YY)	
Number of Days Leaking	If date and time stamp are reliable and used consistently by respondent, then emissions may be calculated based on actual time leaking. E.G. Repair time - damage event time = duration of event. If respondent has average or historical leak duration based on the nature and circumstances of damages, then these may be applied to like damage events. The emissions factors should be adequately supported and explained in the filing. If actual time stamps and historical averages are not available, then whole days should be used in the engineering calculation. The leak begins with the damage event date thru repair date or December 31st of subject year, whichever is later. E.G. Days Leaking = Repair date - date of damage + 1 day.
Emission Factor (Mscf/Day)	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	Provide method of calculation and example of formula. Explain how any EF's used were derived.

Blowdowns	
ID	
Geographic Location	GIS, zip code, or equivalent
Number of Blowdown Events	
Annual Emissions (Mscf)	
Explanatory Notes / Comments	

Component Vented Emissions	
ID	
Geographic Location	GIS, zip code, or equivalent

Station Classification	A1 = above grade, pressure <100 psi A2 = above grade, pressure =100-300 psi A3 = above grade, pressure >300 psi B1 = below grade, pressure <100 psi B2 = below grade, pressure =100-300 psi B3 = below grade, pressure >300 psi
DeviceType	C = connector OE = open-ended line M = meter P = pneumatic device PR = pressure relief valve V = valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
NumberofDays Emitting	Because the emissions are a factor of design or function, these emissions counted for the entire year.
Engineering or Manufacturer's based Estimate of Emissions	
Annual Emissions(Mscf)	The emissions should be based on 365 days times the actual volume emitting if known, or the approved Emissions Factor. Note whether the emissions are based on actual volumetric measures in the next column.
Explanatory Notes / Comments	

Component Leaks	
ID	
Geographic Location	GIS, zip code, or equivalent
Station Classification	A1 = above grade, pressure <100 psi A2 = above grade, pressure =100-300 psi A3 = above grade, pressure >300 psi B1 = below grade, pressure <100 psi B2 = below grade, pressure =100-300 psi B3 = below grade, pressure >300 psi
DeviceType	C = connector OE = open-ended line M = meter P = pneumatic device PR = pressure relief valve V = valve O = other devices
Bleed Rate	L = low bleed I = intermittent bleed H = high bleed NA = not applicable
Manufacturer	
Pressure(psi)	MOP = maximum operating pressure over the past year
Discovery Date(MM/DD/YY)	List the actual discovery date. If the leak was discovered in the year of interest, then we will assume the component was leaking from the beginning of the year for emissions reporting purposes.
Repair Date(MM/DD/YY)	Date that the component repair stopped the leak. Any associated blowdowns as a result of the repair should be included in the blowdowns tab.
NumberofDays Leaking	Assume Leaking from January 1 of subject year or prior survey date, whichever is later, thru the repair date (if repaired in year of interest) or December 31 of subject year, whichever is earlier. For O&M discovered leaks, assume that the leak begins with the discovery date thru repair date or December 31st of subject year, whichever is earlier.
Emission Factor(Mscf/day)	
Annual Emissions(Mscf)	
Explanatory Notes / Comments	